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NEWSLETTER

Indiana State Department of Health

Epidemiology Resource Center
2 North Meridian Street, 3-D
Indianapolis, IN 46204
317/233-7416

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What is Syndromic Surveillance?

Linda Jones, RN, MSN
ISDH Epidemiology Resource Center

Syndromic surveillance is the ongoing, timely recognition, collection, and analysis of information that may indicate bioterrorist activity or other public health emergency. Syndromic surveillance data are collected prior to the actual diagnosis of disease. Examples include chief complaints of patients seen in a hospital emergency department, increased number of students absent from a specific school or school district, or indicators of certain symptoms within a community; such as increased sales of anti-diarrheal or other (over-the-counter) medications.

The Indiana State Health Department (ISDH) will develop and maintain a statewide system for the collection, analysis, and response to syndromic surveillance information. Used throughout Indiana, this system will aid in identifying a possible bioterrorist event or other public health emergency. The ISDH is evaluating software programs and will develop new programs as needed.

Why Conduct Syndromic Surveillance?

Syndromic surveillance requires "real time" or immediate recognition and response to specific physical symptoms. Traditional surveillance is based on a known diagnosis. Detection of a possible bioterrorist event requires rapid identification and response. Traditional surveillance generally includes a lag period of several days between reporting of symptoms and the actual diagnosis of an illness. In syndromic surveillance, the suspected illness (or symptoms) will elicit the needed action and response.

Currently, the symptoms associated with exposure to the Category A bioterrorism agents are of primary interest. These diseases include anthrax, botulism, plague, smallpox, tularemia, and viral hemorrhagic fevers. In addition, symptoms of other unusual and unexpected illnesses are also important. Symptoms associated with these illnesses that may initiate investigation include:

Table of Contents:

- Respiratory symptoms
- Fever/malaise/sepsis
- Flu-like illness
- Neurologic symptoms
- Gastrointestinal illness
- Vesicular rash
- Sudden, unexplained death

Obtaining Information

The ISDH will implement computer-based systems that will allow direct daily reporting to the agency on bioterrorist symptoms/syndromes or other relevant data. A variety of data sources will be developed over the next two years. Sources may include:

- Hospital Emergency Department patient visits
- Over-the-counter (OTC) medications sold in drug and grocery stores
- School absenteeism counts
- Poison Center "call-in": information
- Laboratory tests ordered
- Emergency Medical Services dispatch call information
- State mortality statistics
- Ambulatory Care patient visits
- Physicians' orders and other hospital admission information
- Managed care clinic patient visits
- Veterinary diagnostic laboratories
- Medical Examiner's (Coroner's) reports
- Nurse Call lines (third party payors)
- Day Care Centers
- Red Cross, Fire, and Law enforcement calls

Role of Local Health Departments

Local health departments (LHD) will assist in building the statewide infrastructure for syndromic surveillance and response. In addition, the LHDs will aid in investigating any aberrations detected that may indicate a possible bioterrorist event. Assistance from LHDs may include:

- Evaluate compatible systems
- Assist in the recruiting of local partners and participants
- Educate the department, community, and district
- Prepare to follow-up on "alerts"
- Provide feedback to the ISDH on the process in "pilot" areas
- Initiate investigations when data indicates need
- Continue to enhance data reporting relationships with hospitals, physicians, clinics, and schools in local jurisdictions

The ISDH will establish a data collection system by 2004 and will pilot this system using selected hospital emergency departments, the Indiana Poison Center, and selected schools or school districts. Specific pilot areas have not yet been determined. LHDs should continue to develop local knowledge bases about bioterrorism events and bioterrorism preparedness activities. The ISDH will contact the LHDs about specific activities slated for their districts/communities. In addition the ISDH will inform LHDs about local involvement for the statewide

program. For questions or more information about the usefulness and/or compatibility of a specific software program with the planned ISDH system, please contact:

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Arthritis in Indiana

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Background

There is no one disease known as "arthritis." The term covers more than 100 related diseases and conditions including osteoarthritis, rheumatoid arthritis, juvenile rheumatoid arthritis, fibromyalgia, scleroderma, lupus, bursitis, and gout. Though their causes vary, these diseases may involve one or more joints or the ligaments, muscles, and tendons surrounding a joint. Some forms of arthritis are systemic and may affect internal organs.

The painful symptoms and diminished function associated with arthritis contribute greatly to reduced quality of life for individuals and their families. In fact, arthritis is the leading cause of disability[1] among Americans. In recognition of this, the Centers for Disease Control and Prevention (CDC) began funding states in 1999 to develop state programs to encourage early diagnosis, proper treatment, and the use of self-management strategies by people with arthritis. The Indiana State Department of Health (ISDH), Chronic Disease Program was awarded funding.

The Indiana Arthritis Initiative (IAI) is the state's arthritis program. The strategic action plan developed by the IAI can be viewed at http://www.in.gov/isdh/dataandstats/arthritis/d25499.pdf.

Data

Results in this report are based on Indiana's 2001 Behavioral Risk Factor Surveillance System (BRFSS) telephone survey[2]. Respondents were considered to have **physician-diagnosed arthritis** if they answered "yes" when asked, "Have you ever been told by a doctor that you have arthritis?" Respondents were considered to have **chronic joint symptoms (CJS)** if they answered "yes" to two questions: "During the last 12 months, have you had pain, aching, stiffness, or swelling in or around a joint?" and "Were these symptoms present on most days for at least one month?" Respondents reporting either physician-diagnosed arthritis or chronic joint symptoms were classified as **having arthritis/CJS**.

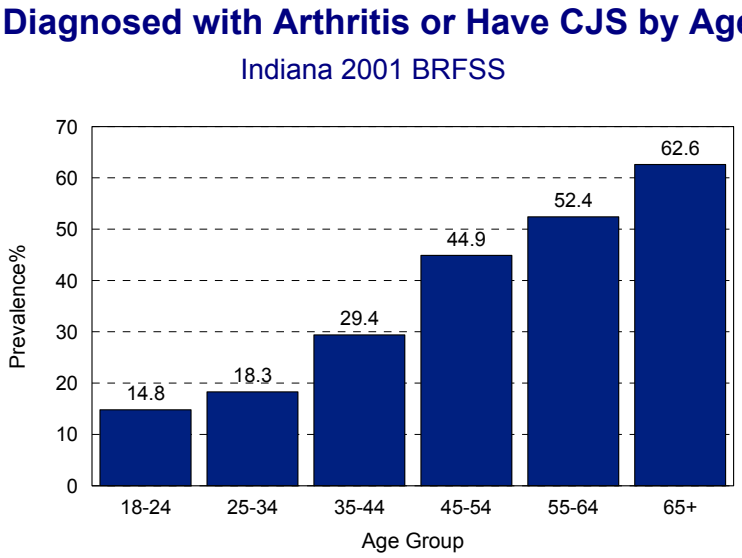
One in three adult state residents (37%) reported arthritis/CJS. Subgroups with higher rates included people in increasing age groups, women, people who were obese, and people with less than a high school education or a household income less than $15,000. The full report on the burden of arthritis in Indiana is available at http://www.in.gov/isdh/dataandstats/arthritis/index.htm.

Some highlights:

- **Age**

The likelihood of developing arthritis increased with age. Almost 15% of 18-24 year old respondents reported arthritis/CJS compared to 62.6% of respondents aged 65 or older (see Figure 1).

Figure 1.



However, it is a myth that arthritis only affects "the elderly". Seventy percent of Hoosiers with arthritis/CJS were 18-64 years old.

- **Gender**

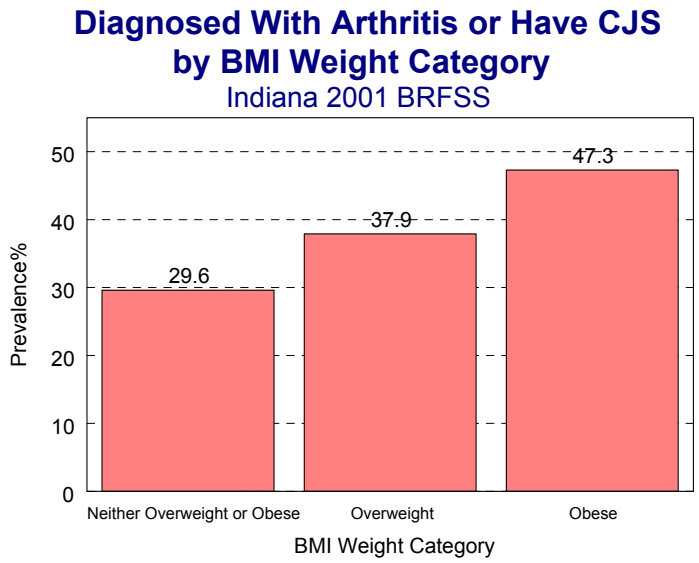
Women were more likely to have arthritis/CJS than men, 41.3% vs. 32.3%, respectively. Rates for the sexes were comparable for adults under 45 years old. However, rates for women exceeded those of men in higher age groups. For adults aged 45-64, 54.7% were women, and for those 65 and older, 66.1% were women.

- **Body Weight**

Indiana ranked as the sixth most obese state in 2001 with 24.5% of Hoosier respondents considered obese, that is, with a body mass index of 30 or greater[3]. The excess weight Hoosiers carry increases stress on weight-bearing joints and creates a greater risk for arthritis. Even modest weight loss can reduce the risk of developing knee osteoarthritis.

Nearly half (47.3%) of respondents considered obese reported arthritis/CJS compared to 29.6% of those whose weight was classified as normal or underweight (see Figure 2). Individuals who were obese were 1.9 times as likely to report activity limitations from chronic joint symptoms as were those whose weight was classified as normal or underweight.

Figure 2.

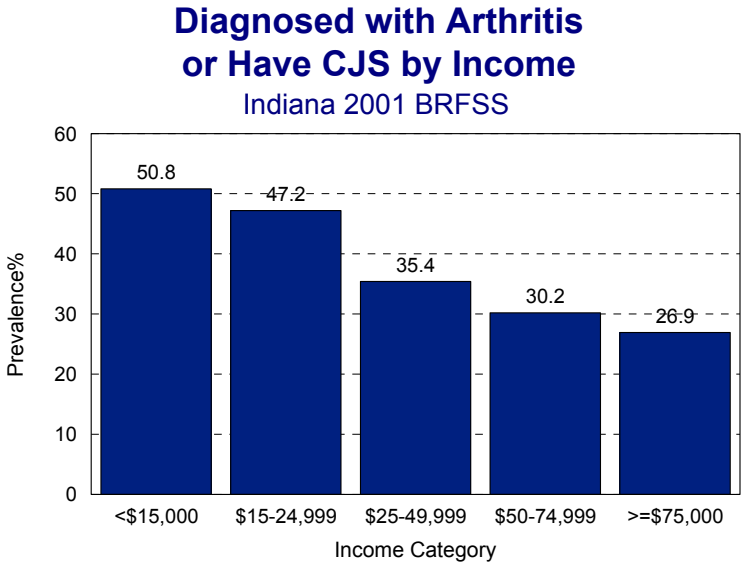


Source: Indiana 2001 BRFSS

- **Socioeconomic Status**

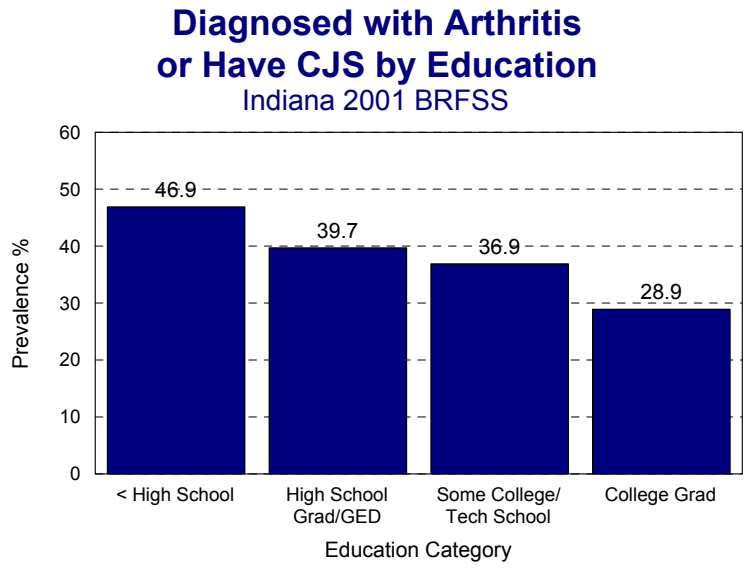
Socioeconomic conditions may play a role in who gets arthritis – as they do for other chronic diseases. Along income and education categories, both of which are markers of socioeconomic status, arthritis rates decreased as income or education increased (see Figures 3 and 4).

Figure 3.



Source: 2001 Indiana BRFSS

Figure 4.



Source: 2001 Indiana BRFSS

Lower income also corresponded to limitations from chronic joint symptoms. Forty percent of those with income lower than $15,000 reported limitations, compared to 26.3% of those with incomes from $25,000 to less than $50,000.

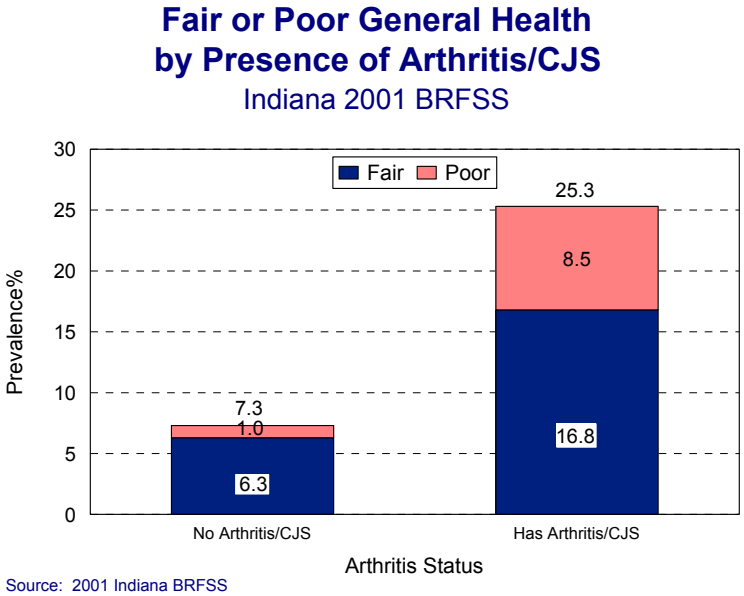
- **Race/ethnicity**

Whites (non-Hispanic/Latino) and African Americans (non-Hispanic/Latino) report similar rates for arthritis/CJS, 37.5% and 34.0%, respectively. Hispanics/Latinos reported a somewhat lower rate of 29.2%. The younger age of the Hispanic/Latino population may contribute to their lower rate.

- **Health status**

A quarter (25.3%) of all respondents with arthritis/CJS characterized their health as fair or poor compared to only 7.3% of people without arthritis/CJS (see Figure 5).

Figure 5.



Source: 2001 Indiana BRFSS

- **Costs**

In 2000, Indiana residents had 17,869 hospitalizations with a primary discharge diagnosis of arthritis, totaling more than $291 million dollars. The majority of the hospitalizations (73.5%) were due to osteoarthritis[4]. Since most people with arthritis do not require hospital care, hospitalization costs reflect only a part of the entire burden.

As the state's population continues to age, the cost of arthritis will increase.

IAI activities

Too often, people's reaction to aching or stiffness in their joints is to use them less. However, studies have shown that people with arthritis can maintain or improve joint function and reduce pain by appropriate physical activity. Slow, gentle **range-of-motion exercises** lubricate joints and reduce stiffness. **Strengthening exercises** stabilize and protect joints by strengthening the muscles that surround them. **Low-impact aerobic activities**, like walking, bicycling, and swimming, increase circulation to the joints and promote general well-being. (Individuals should consult with a health care provider for advice appropriate to their medical needs.)

A second important IAI message is that losing excess body weight may reduce arthritis symptoms and may prevent or delay the onset of osteoarthritis in the knee. Even modest weight loss can help.

To increase awareness about the prevalence of arthritis and the role increased movement and activity plays in reaching optimum function, IAI will increase analysis and publication of state arthritis data; increase availability of educational material to programs and events serving people with or at risk for arthritis; increase availability of Arthritis Foundation educational and physical activity programs; develop a management tool for patients; increase awareness of arthritis prevalence among healthcare providers and legislators; and better integrate arthritis into relevant existing ISDH programs.

References

1) CDC. Prevalence of disability and associated health conditions among adults – United States, 1999. MMWR 2001;50(08):120-5. Please note that that the definition of disability in this analysis was broader than that used in an early 1994 report. Disability was defined as self-reported or proxy-reported difficulty with one or more eight measures: 1) difficulty with one or more specified functional abilities (able to see words and letters in newspaper print, hear normal conversations, have speech understood by others, lift and carry up to 10 lbs, climb a flight of stairs without resting, and walk three city blocks); 2) difficulties with one or more activities of daily living (get around inside the home, get in and out of bed or a chair, bath, dress, and use the toilet); 3) difficulty with one or more instrumental activities of daily living (get around outside the home, keep track of money and bills, prepare meals, do light housework, use the phone); 4) reporting one or more selected impairments (learning disabilities, mental retardation, other developmental disabilities, Alzheimer disease, senility, dementia, and other mental or emotional conditions); 5) use of assistive aids (e.g., wheelchair, cane, crutches, or walker) for 6 months or longer; 6) limitation in the ability to work around the house; 7) limitation in the ability to work at a job or business (data for people 16-67 years); and 8) receiving federal benefits on the basis of an inability to work.

2) The BRFSS is administered annually by all 50 states with funding from the CDC. State residents 18 years and older are called at random and asked questions about personal behaviors that increase risk for one or more of the ten leading causes of death and disability.

3) 2001 BRFSS Indiana Summary Prevalence Report, CDC. Obesity was determined by self-reported weight and height and the Body Mass Index (BMI) classification system. A BMI of 25 to 29.9 is considered overweight and a BMI of 30 and greater is considered obese. To view the BMI table, visit http://www.niddk.nih.gov/health/nutrit/pubs/statobes.htm#table.

4) 2000 Hospital Discharge Data. Source: Indiana State Department of Health, Epidemiology Resource Center. ICD-9 codes used to compute arthritis data were those defined by the National Arthritis Data Workgroup (NADW) which is composed of researchers from CDC, AF, and the American College of Rheumatology (ACR). For a list of the ICD-9 codes, see CDC, Arthritis prevalence and activity limitations, MMWR, June 24, 1994; 43(24):433-438.

Who Has Diabetes?

Antoinette M. Holt, M.P.H.
ISDH Epidemiology Resource Center

Nationally

According to the National Diabetes Information Clearinghouse, there are currently 17 million people who suffer from diabetes. That means 6.2 % of the total population of the United States have diabetes. Of these numbers, 11.1 million have been diagnosed, and 5.9 million do not even know that they have it. The death rate actually shows the severity of diabetes and how the disease is impacting the United States. In 2001, diabetes ranked as the sixth leading cause of death. In 2001, data indicated that a record number of 71,252 people die annually of diabetes. In Indiana, 1,668 residents died from diabetes in 2001.

Definition

Diabetes mellitus is a group of diseases characterized by high levels of blood glucose resulting from defects in insulin secretion, insulin action, or both. Diabetes can be associated with serious complications and premature death, but people with diabetes can take measures to reduce the likelihood of such occurrences.

The Types of Diabetes

- **Type 1** usually occurs in younger individuals, rapid onset, the pancreas is unable to produce insulin in the beta cells and the individual must take insulin.
- **Type 2** usually seen in older individuals with a gradual onset, the pancreas is still making insulin, but at reduced levels.
- **Gestational** diabetes occurs during pregnancy and places the woman at higher risk for type 2 diabetes.

Race and Ethnicity

Clinic-based reports and regional studies indicate that type 2 diabetes is becoming more common among American Indians, African Americans, and Hispanics and Latinos. National prevalence data indicate:

- Whites: 11.4 million people. 7.8% of all non-Hispanic whites have diabetes.

- Blacks: 2.8 million people. 13% of all non-Hispanic blacks have diabetes. On average, Blacks are 2 times more likely to have diabetes than whites of similar age.

- Hispanic/Latinos: 2 million people. 10.2% of all Hispanic/Latino Americans have diabetes. On average, Hispanic/Latino Americans are 1.9 times more likely to have diabetes than non-Hispanic whites of similar age. Mexican Americans, the largest Hispanic/Latino subgroup, are 2 times more likely to have diabetes than non-Hispanic whites of similar age. Similarly, residents of Puerto Rico are 2 times more likely to have diagnosed diabetes than U.S. non-Hispanic whites.

- American Indians and Alaska Natives who receive care from the Indian Health Service (IHS): 105,000 people. 15.1% of American Indians and Alaska Natives receiving care from Indiana Health Services have diabetes. At the regional level, diabetes is least common among Alaska Natives (5.3%) and most common among American Indians in the southeastern United States (25.7%) and in certain tribes from the Southwest. On average, American Indians and Alaska Natives are 2.6 times more likely to have diabetes than non-Hispanic whites of similar age.

- Asian Americans and Native Hawaiian or other Pacific Islanders: Prevalence data for diabetes among Asian Americans and Native Hawaiian or other Pacific Islanders are limited. Some groups within these populations are at increased risk for diabetes. For example, data collected from 1996 to 2000 suggest that Native Hawaiians are 2.5 times more likely to have diagnosed diabetes than white residents of Hawaii of similar age.

In Indiana, the 2001 Behavior Risk Factor Surveillance Survey asked "HAVE YOU EVER BEEN TOLD BY A DOCTOR THAT YOU HAD DIABETES". Of those responding, 5.9% of whites said yes, 11.7% of Blacks said yes, and 9.7% of Hispanics said yes.

Diabetes ranked third in the top 5 leading causes of death among blacks in Indiana in 2001.

Age:

- Age 65 years or older: 6.3 million. 18.4% of all people in this age group have diabetes.
- Age 20 years or older: 15.6 million. 8.2% of all people in this age group have diabetes.
- Under age 20: About 151,000 persons less than 20 years of age have diabetes. This represents 0.19% of all people in this age group. Approximately one in every 400 to 500 children and adolescents has type 1 diabetes.

As shown, diabetes is becoming a growing epidemic. There are currently legislations, programs, and projects that the Indiana State Department of Health (ISDH) is involved in and that may serve as valuable resources. For more information, visit the ISDH web site at www.in.gov/isdh/programs/diabetes/splash.htm.

Health Conference

The ISDH will be sponsoring a health conference that targets managing diabetes.

This free health conference, "Too Sweet For Your Own Good", will be held Saturday, November 15, in Indianapolis. By attending this conference, individuals with diabetes or those with loved ones with diabetes can learn how to manage the disease and protect their health.

References

1. National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2000. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2002.
2. National Centers for Health Statistics, 2003
3. Indiana Mortality Report for 2001

4. 1997-1999 National Health Interview Survey (NHIS), National Center for Health Statistics, Centers for Disease Control and Prevention.
5. 1996-2000 Behavioral Risk Factor Surveillance System (BRFSS), National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.
6. Indian Health Service (IHS), 1998 outpatient database.
7. Behavioral Risk Factor Surveillance System, 2001
8. http://www.in.gov/isdh/programs/diabetes/splash.htm

Indiana's APIC Chapter Receives National Recognition

Karen Gordon, Field Epidemiologist
District 9

Indiana Chapter 76 of APIC (Association for Professionals in Infection Control and Epidemiology, Inc.) has been honored as recipient of two Chapter Excellence Awards. The Indiana chapter was recognized at the APIC International Conference in San Antonio, Texas on June 9. APIC President, Barbara Soule, presented the 2003 Chapter Excellence Awards for *Strategic Alliances* and *Member Support and Organizational Excellence* to Tonya Heim, APIC Indiana President. Tonya is the Director of Quality Services/Compliance at St. Joseph's Hospital in Huntingburg, Indiana.

The *Strategic Alliances* award is given to the chapter that best demonstrates excellence in identifying, evaluating, and pursuing opportunities for synergistic alliances. Indiana's application submitted under this category emphasized:

- the chapter's involvement in bioterrorism planning throughout the State including their immediate past president, Vickie VanDeventer's inclusion on the Indiana Hospital Bioterrorism Planning Committee,
- collaboration with the Indiana State Department of Health to draft guidelines for multi-drug resistance,
- representation at the Indiana Hospital Association's Comparative Outcome Project Steering Committee,
- assembling a "Vendor Hall" at state and regional meetings, and
- partnering among regional association members and local health departments.

The *Member Support and Organizational Excellence* award is presented for excellence in providing support, recognition, and opportunities for professional growth and development of members as well as improvement of APIC. Some the activities, which were cited in this award application were:

- new member packets provided by the membership committee,
- availability of a website for resources and updates (www.apicin.com),
- publication of a newsletter entitled "Infection Reflections",
- regional meetings that provide opportunities for mentoring,
- two statewide meetings per year featuring national speakers and published in-state members, and
- a scholarship program for assistance to attend the international conference.

Chapter President Tonya Heim expressed that the awards were particularly gratifying because the award applications represented the ongoing work, which members have been doing for years. It was simply a matter of documenting those activities and compiling them into a successful award application. Each chapter is limited to applications in three categories per year.

TRAINING ROOM

2003 Public Health Nurses Conference

Co-sponsored by:
ISDH Epidemiology Resource Center
and Local Liaison Office

WHEN: **November 13-14, 2003**

WHERE: **Hampton Inn**
105 South Meridian Street
Indianapolis, IN 46225
Phone: (317) 261-1200 or toll free (800) 426-7866
(Each person must reserve his/her own room before November 3.)

REGISTRATION: **Call Janet Chorpenning, Local Liaison Office,**
at (317) 233-1385
OR
Email at jchorpen@isdh.state.in.us

***NOTE:**

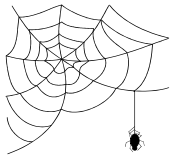
Thursday - topics will feature the latest information on communicable disease issues, including:

*Case investigation
*Communicable disease rule
*Hepatitis C reporting
*Vaccine-preventable disease investigation
*SARS update
*Lab samples and testing
*Syndromic surveillance
*Confidentiality
*Cultural competancy
*The NEDSS reporting database

Friday - topics will address continuing education opportunities, including:

*Learning management systems
*IU Master's in Public Health program
*Immunization Program update
*Internet community health graduate degree program

We hope to see you there!



Wonderful Wide Web Sites

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.in.gov/isdh/dataandstats/epidem/epinews_index.htm

Indiana Cancer Incidence Report (1990, 95,96, 97)

Indiana Cancer Mortality Report (1990-94, 1992-96)

Indiana Health Behavior Risk Factors (1995-96, 97, 98, 99, 2000, 2001)

Indiana Health Behavior Risk Factors (BRFSS) Newsletter

Indiana Hospital Consumer Guide (1996)

Public, Hospital Discharge Data (1999, 2000, 2001)

Indiana Maternal & Child Health Outcomes & Performance Measures (1988-97, 1989-98, 1990-99, 1991-2000)

Indiana Marriage Report (1995, 97, 98, 99, 2000)

Indiana Mortality Report (1999, 2000, 2001)

Indiana Natality Report (1998, 99, 2000, 2001)

Indiana Induced Termination of Pregnancy Report (1998, 99, 2000)

Indiana Infectious Diseases Report (2000)

Former Indiana Report of Diseases of Public Health Interest (1996, 97, 98, 99)

HIV Disease Summary

Information as of September 30, 2003 (based on 2000 population of 6,080,485)

HIV - without AIDS to date:

337	New HIV cases from August 2002 through September 2003	12-month incidence	5.54 cases/100,000
3,740	Total HIV-positive, alive and without AIDS on September 30, 2003	Point prevalence	61.51 cases/100,000

AIDS cases to date:

444	New AIDS cases from August 2002 through September 2003	12-month incidence	7.30 cases/100,000
3,509	Total AIDS cases, alive on September 30, 2003	Point prevalence	57.71 cases/100,000
7,300	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in September *MMWR* Week 36-39		Cumulative Cases Reported January - September *MMWR* Weeks 1-39	
	2002	2003	2002	2003
Campylobacteriosis	40	62	385	395
Chlamydia	1,723	1,402	12,779	12,880
E. coli O157:H7	4	15	47	73
Hepatitis A	3	7	37	54
Hepatitis B	7	5	39	27
Invasive Drug Resistant *S. pneumoniae* (DRSP)	5	6	132	119
Gonorrhea	721	600	5,471	4,957
Legionellosis	1	3	14	21
Lyme Disease	4	1	18	17
Measles	0	0	2	0
Meningococcal, invasive	0	3	24	39
Pertussis	30	7	91	50
Rocky Mountain Spotted Fever	0	0	3	1
Salmonellosis	65	68	408	462
Shigellosis	15	20	79	127
Syphilis (Primary and Secondary)	8	0	48	36
Tuberculosis	11	7	87	96
Animal Rabies	4 (all bats)	7 (bats)	30 (29 bats, 1 skunk)	22 (21 bats, 1 raccoon)

For information on reporting of communicable diseases in Indiana, call the *ISDH Epidemiology Resource Center* at (317) 233-7665.

Indiana
Epidemiology
Newsletter

The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.